ABSTRACT OF THE DISCLOSURE

A biochip reader wherein spectroscopic information of a sample under analysis is arranged in spaces between images of the sample arranged on a biochip. The reader comprises a confocal microscope and the biochip comprises a transparent substrate to allow passage of the excitation light and fluorescent light from the sample with the excitation light being applied from the side opposite that on which the samples are arranged so that noise from dust and the like is avoided by the transmitted light avoiding contact with the dust. Another aspect is an electrophoresis system wherein different coloring material are used for each of a variety of target substances, so that the same lane and area are utilizable to concurrently detect a polychrome fluorescent pattern of the different targets. A confocal scanner or fluorescence imaging system is used with a plurality of filters to detect the multi-colored fluorescences of the target substance. Advantageously, in the biochip reader, a lower S/N ratio is obtained together with lower cost; and in the electrophoresis system, concurrent detection of multiple polychormatic fluorescence patterns is attained.